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# Service Information Letter

Letter No. A-132

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## Kelly Aerospace, Inc.\* Starter Installation and Duty Cycle Requirements

### INTRODUCTION:

Kelly Aerospace, Inc. has produced a new family of starters, the E-Drive inline style and the X-Drive side mounted solenoid style. Both styles come in various configurations. These starters have specific important requirements in regards to the installation and "Duty Cycle" or operation which must be observed. While the installation is straight forward in most cases, the "Duty Cycle" will vary in the number and duration of start attempts and cool down if a start is not achieved.

This Service Information Letter is intended to provide information and guidance as to the installation and normal operation of Kelly Aerospace, Inc. E-Drive and X-Drive starters on aircraft or rotorcraft.

### COMPLIANCE:

Observe the procedures upon any installation of the starter and Duty Cycle at each normal start thereafter.

### EFFECTIVITY:

All Kelly Aerospace, Inc. E-Drive and X-Drive starters.

### PROCEDURE:

#### *For E-Drive Starters:*

1. Before installation of an E-Drive starter, make sure the engine is properly grounded to the aircraft.
2. Upon installation of the starter, torque the mounting nuts to 204 inch-pounds (23.05 Nm) unless otherwise stated by the engine manufacturer in their applicable publications.
3. While holding the bottom nut, torque the top terminal stud nut to 40 inch-pounds (4.52 Nm) *maximum* unless otherwise stated by the engine manufacturer in their applicable publications.

#### *Duty Cycle:*

1. It is critical to observe the duty cycle to avoid damage to the starter and to ensure long service life.
2. **When using the aircraft battery:** You can make a ten (10) second start attempt with a twenty (20) second rest twenty (20) times. After this, observe a ten (10) minute cool down period before attempting another start.
3. **When using a ground power unit (GPU):** GPU voltage must never exceed 5% of the rated aircraft system voltage. You can make a ten (10) second start attempt with a twenty (20) second rest ten (10) times. After this, observe a ten (10) minute cool down period before attempting another start.
4. Never apply power to the starter unless mounted on the engine as free run may cause damage to the starter. *If you suspect a free run has occurred contact Kelly technical support at 888-461-6077.*

\* Inclusive of PMA's as granted to Kelly Aerospace Thermal Systems and / or Kelly Aerospace Energy Systems, LLC.

## **PROCEDURE: (Cont'd)**

### ***For E-Drive Starters: (cont'd)***

#### **Logbook Entry:**

1. Upon successful completion of the starter installation, make an appropriate log book entry. *Note: This SIL must be referenced and recorded any time an E-Drive is installed or replaced.*

### ***For X-Drive Starters:***

1. Before installation of an X-Drive starter, make sure the engine is properly grounded to the aircraft and that a 16 gauge jumper wire between the power cable connection stud and the 1/4 inch blade terminal of the solenoid is in place and connected. *(Starter will not function if jumper is disconnected or missing.)*
2. If the X-Drive is being installed for the first time, check to see if the airframe starter input cable is long enough to fit to the starter solenoid. If not use the extension along with the instructions that came with the new starter and connect the starter. If the the airframe starter input cable is long enough, continue with these instructions.
3. Upon installation of the starter torque the mounting nuts to 204 inch-pounds (23.05 Nm) unless otherwise stated by the engine manufacturer in their applicable publications.
4. While holding the bottom nut, torque the top terminal stud nut to 40 inch-pounds (4.52 Nm) *maximum* unless otherwise stated by the engine manufacturer in their applicable publications.

#### **Duty Cycle:**

1. It is critical to observe the duty cycle to avoid damage to the starter and to ensure long service life.
2. ***When using the aircraft battery:*** You can make a ten (10) second start attempt with a twenty (20) second rest twenty (20) times. After this, observe a ten (10) minute cool down period before attempting another start.
3. ***When using a ground power unit (GPU):*** GPU voltage must never exceed 5% of the rated aircraft system voltage. You can make a ten (10) second start attempt with a twenty (20) second rest ten (10) times. After this, observe a ten (10) minute cool down period before attempting another start.
4. Never apply power to the starter unless mounted on the engine as free run may cause damage to the starter. *If you suspect a free run has occurred contact Kelly technical support at 888-461-6077.*

#### **Logbook Entry:**

1. Upon successful completion of the starter installation, make an appropriate log book entry. *Note: This SIL must be referenced and recorded any time an X-Drive is installed or replaced.*

## **MATERIAL REQUIRED:**

Not Applicable.

## **PARTS AVAILABILITY:**

Not Applicable.

## **WARRANTY STATEMENT:**

The sole warranty applicable to this service publication is related to the terms and conditions found in the Kelly Aerospace Energy Systems, LLC Limited Warranty Policy related to new or overhauled starters or related spare parts. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the starter, engine, or aircraft/rotorcraft nor does it imply any responsibility for economic or consequential loss of any kind.